

CLAIMS

1. A system of dynamic QoS negotiation in NGN, comprising:
 - a Resource and Admission Control Subsystem (RACS), adapted to obtain and process a resource reservation request required for service transferred in NGN, perform authentication and determine admission control decision parameters based on operation policy rules, user profile, and availability of transport resources, and send the admission control decision parameters to a concerned Transport Functional (TF) entity for execution, wherein said reservation request contains QoS requirement parameters;
 - the transport functional entity, adapted to ensure QoS of the media flow of the service transferred in NGN according to the admission control decision parameters.
- 15 2. The system as in claim 1, wherein the system further comprises:
 - a service control functional (SCF) entity, adapted to obtain the QoS requirement parameters required for the service requested by a user terminal by parsing service signaling or determine the QoS requirement parameters according to the service policies, and send the QoS requirement parameters to said RACS.
- 20 3. The system as in claim 1, wherein the system further comprises:
 - a Network Attachment Subsystem (NASS), adapted to manage and configure user access network, communicate with said RACS and said SCF entity, and provide said RACS and said SCF entity with user profile information associated with the service.
- 25 4. The system as in claim 1, wherein the RACS obtains the QoS parameter information from the TF entity.
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5. A method of dynamic QoS negotiation based on the system of dynamic QoS negotiation in NGN, comprising:

A. obtaining, by a Resource and Admission Control Subsystem (RACS) in NGN, QoS requirement parameters required by a service;

5 B. performing, by said RACS, admission control in accordance with the QoS requirement parameters, and determining admission control decision parameters;

C. sending, by said RACS, the admission control decision parameters to a transport functional (TF) entity at network boundary,

10 and executing, by said transport functional entity at network boundary, the admission control decision parameters to process and transfer the media flow of the service accordingly.

6. The method as in claim 5, further comprising

15 obtaining, by said RACS, the QoS requirement parameters of the service through a Service Control Functional (SCF) entity, a Network Attachment Subsystem (NASS), the TF entity, or a Network Management System (NMS).

20 7. The method as in claim 5, wherein

when the service comprises a plurality of media flows, it is needed to determine the QoS requirement parameters for each of the media flows respectively.

25 8. The method as in claim 5, before the step A, further comprising a step E:

initiating, by a user terminal, a service request to the SCF entity;

30 when the service request does not carry the QoS requirement parameters of the service, determining by the SCF entity the type of the service in accordance with the service request, and determining

the QoS requirement parameters required for the service in accordance with the service type;

when the service request carries the QoS requirement parameters of the service, obtaining by the SCF entity the QoS requirement 5 parameters of the service by parsing the service request.

9. The method as in claim 5 or 8, wherein when the user terminal is a fixed terminal, the step E further comprises:

the SCF entity sending a resource reservation request containing 10 the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS.

10. The method as in claim 5 or 8, wherein when the user terminal is a mobile terminal, the step E further comprises:

15 sending, by the SCF entity, a resource authentication request containing the QoS requirement parameters of the service to the RACS via a corresponding interface with the RACS;

after authenticating successfully, notifying, by the RACS, the user terminal via the SCF entity;

20 initiating, by the user terminal, a resource reservation request to the TF entity of the network via a path-coupling QoS signaling carrying the QoS requirement parameters of the service; handling by the TF entity at network boundary the QoS signaling and sending a resource reservation request containing the QoS requirement 25 parameters of the service to the RACS via a corresponding interface with the RACS.

11. The method as in claim 5, 8, or 10, wherein when a token mechanism is used, the method further comprises:

30 after authenticating successfully, returning by the RACS an admission token to the user terminal via the SCF entity; carrying

the admission token in a path-coupling QoS signaling and transferring the admission token to the RACS via a resource reservation request; checking by the RACS whether the resource reservation request has passed the authentication and searching for relevant information of 5 the service in accordance with the admission token.

12. The method as in claim 5, wherein said determining by the RACS the admission control decision parameters comprises:

obtaining, by the RACS, the user profile information of the service 10 and the policy rules information configured by the operator, making admission control decision for the QoS requirement parameters of the service based on the user profile information and the policy rules information, deciding whether to permit the media flow of the service to enter into the network TF entity and to be treated with the requested 15 QoS, and determining the admission control decision parameters.

13. The method as in claim 5 or 12, wherein determining by said RACS the admission control decision parameters comprises:

obtaining, by the RACS, the current status information of the 20 transport resources in the network, making admission control decision for the QoS requirement parameters of the service based on above information, checking whether there are enough transport resources available in the network to meet the QoS requirement parameters of the service, and determining the admission control decision 25 parameters.

14. The method as in claim 5, wherein the admission control decision parameters comprise:

gate control, bandwidth allocation, Differentiated Service Code 30 Point mark, and aggregation and adaptation control information.

15. The method as in claim 5, wherein the QoS requirement parameters comprise:

bandwidth required for transporting the media flow of the service, as well as allowable delay, jitter, and packet loss rate.

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16. The method as in claim 5, further comprising:

directly initiating, by the user terminal, a resource reservation request to the TF entity for the media flow of the developed service via a dedicated path-coupling QoS signaling;

10 upon receiving the resource reservation request from the user terminal, sending, by the TF entity at network boundary, a resource reservation request carrying the QoS requirement parameters of the media flow of the user service to the RACS, and executing step C.

15 17. The method in claim 5, further comprising:

configuring, by the NMS or the NASS, gate control, bandwidth allocation, DSCP marking control, and aggregation and adaptation control parameters onto the TF entity at network boundary via the RACS.